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The relation between social anxiety, social withdrawal and (cyber)bullying roles: A multilevel analysis

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The relation between social anxiety, social withdrawal and (cyber)bullying roles: A multilevel analysis

Abstract

This study investigated how social anxiety and social withdrawal are related to middle school students' involvement in bullying, and whether class-levels variables influence this association. There were 668 participants (M_{age} = 12.73, SD = 1.08), who were part of a screening for inclusion in a social and emotional learning program. Results showed there was a high overlap between traditional bullying and cyberbullying in bullies (52.4%), but not victims (32.7%). Girls reported more social anxiety than boys, while no gender differences were found for social withdrawal. Bullying and cyberbullying victims, as well as bullying bully-victims, displayed higher levels of social anxiety than students who were not involved in bullying/cyberbullying. All students involved in bullying (victims, bullies and bully-victims) had higher levels of social withdrawal; however, bully-victims were those who showed the highest levels. Gender ratio did not moderate the relation between social anxiety, social withdrawal and any bullying or cyberbullying roles, but class size moderated the relation between being a bully/victim and social withdrawal. These results help to clarify the relation between social anxiety, social withdrawal and (cyber)bullying roles, and supported the importance of including class-level variables when analyzing the relation between bullying and social and emotional competencies.

Keywords: social anxiety, social withdrawal, bullying, cyberbullying, class-level variables

1. Introduction

Social anxiety is a major problem for children and adolescents given that it may be difficult for socially anxious youth to initiate social interactions, become accepted within the larger peer group, and develop close intimate friendships (Bowles, 2016). Social anxiety is characterized by a persistent fear of one or more social or performance situations in which the person is exposed to unfamiliar people or to possible scrutiny by others (APA, 2013) and this problem is amplified by reports that social anxiety has intensified in recent decades (Ormel et al., 2014).Therefore, if social events are interpreted as threatening they may evoke social anxiety and elicit self-protective strategies/behaviors such as withdrawal or social avoidance (Erath, Flanagan, & Bierman, 2007). Social withdrawal refers to consistent display of solitary behaviors in the presence of peers, socially withdrawn students avoid interactions with their peer because of an underlying social fear and anxiety that inhibits social approach motivations (Oh et al., 2008), therefore social withdrawal significantly interferes with personal and social functioning, generating deep distress and unease. There are several reasons that justify the study of social anxiety and social withdrawal in adolescence (Delgado, Inglés, & García-Fernández, 2013), because both conditions may constitute a serious threat to adolescents' normal development, as socially anxious adolescents may withdraw from social situations or disengage from peer activities that are critical to normal development and socialization (La Greca & Stone 1993).

A great number of studies detail problems social problems associated with high social anxiety. Several authors (Miers, Blöte, de Rooij, Bokhorst, & Westenberg, 2013; Tillfors, Persson, Willen, & Burk, 2012) concluded that adolescents with high social anxiety may display greater difficulties in their relationships with their classmates and other

same age students due to deficits in social skills used to interact with their peers, that result in a greater difficulty in behaving or be cooperative and pro-social (Miers et al., 2013). As a result, students with higher social anxiety had fewer close friends (Tillfors et al., 2012; vanRoy, Kristensen, Groholt, & Clench-Aas, 2009), were more frequently unnoticed by their peers (Delgado et al., 2013), were less accepted by classmates (La Greca & López, 1998; Tillfors et al., 2012), mingled less frequently with peers by phone, text message or email (VanRoy et al., 2009) and were more ignored and victimized by their peers (Ranta, Kaltiala- Heino, Perkonene, & Marttunen, 2009; van Roy et al., 2009).

Moreover, in an educational context, students with high social anxiety showed a greater lack of adjustment in school (Ranta et al., 2009), manifesting avoidance behaviours in response to school work, which can contribute to the student performing below his/her potential and put them at risk to prematurely abandon the educational system (Delgado et al., 2013). Furthermore, students with high social anxiety exhibited greater school absenteeism and felt more stress towards academic tasks (van Roy et al., 2009), and were involved in fewer extracurricular activities (Delgado et al., 2013), than students without social anxiety.

1.1.Bullying and Cyberbullying

Bullying has been acknowledged as a pervasive problem in schools for several decades in many countries around the world (e.g. Authors, 2016; Currie et al., 2012; Ranta, Kaltiala-Heino, Frojd, & Marttunen, 2012; Swearer & Hymel, 2015). Following criteria established by Olweus (1993), bullying is characterized by three criteria: (a) repetition, in bullying a child or a group of children (bullies) repeatedly and over time inflicts injury or discomfort upon other child (victim); (b) imbalance of power, the bully or bullies are either

stronger or perceived to be stronger than the victim and (c) intentionality, the bully or bullies carry out these negative actions and establish this unbalanced relationship intentionally.

Recently, with the vast advances in electronic communications bullying via electronic forms of contact has become widespread (Tokunaga, 2010). Cyberbullying, according to Tokunaga (2010,) is “any behavior performed through electronic or digital media by individuals or groups that repeatedly communicates hostile or aggressive messages intended to inflict harm or discomfort on others”. Some research conceptualizes cyberbullying as differing from conventional bullying in several ways (Patchin & Hinduja, 2006; Slonje & Smith, 2008; Slonje, Smith, & Frisén, 2013). These authors emphasize that cyberbullying reaches a large audience rapidly, contributing to a greater negative impact on the victim who may feel more embarrassed and ashamed (Slonje & Smith, 2008), that it is difficult to escape from it because it can reach victims wherever they go online.

Furthermore, perpetrators of cyberbullying do not usually see victims’ reactions, making it less likely that the perpetrator experiences empathy or remorse and probably leading to bullying continuing longer (Slonje et al., 2013). Finally, cyberbullying may be particularly distressing, because it can go unnoticed for long periods of time due to victims being especially reluctant to tell adults about incidents confronted online if they are concerned about parents restricting their access to technology (Juvonen & Gross, 2008). Other authors, such as Olweus and Breivik (2014), have raised concerns about whether both the repetitiveness and the power imbalance criteria in the general definition of bullying can be applied to cyberbullying.

Other authors (Juvonen & Gross, 2008; Olweus & Breivik, 2014) have proposed that cyberbullying could be considered as an expanded form of bullying in schools because the most widespread forms of electronic communication (such as e-mail or Instant Messaging) are well suited for direct verbal insults (name-calling) which are very frequent at school. In fact, several studies have reported some overlap in the occurrence of bullying and cyberbullying, Ybarra, Diener-West, and Leaf (2007) reported that 36% of children in their nationally-representative sample concurrently experience traditional bullying and cyberbullying, whereas Juvonen and Gross (2008) identified a 85% overlap between online and in-school bullying experiences and have therefore proposed that, although some cyberbullying tactics capitalized on the particular features of online communication technology, cyberspace should be seen as an extension of the school grounds. According to this view, even though children and adolescents may be cyberbullied by either unknown individuals or schoolmates and friends (Patchin & Hinduja, 2006), when most schoolmates have Internet access at home, electronic communication is conducted largely within school-based peer networks (Juvonen & Gross, 2008) and cyberspace should not be seen as a separate risky environment.

1.2.Consequences of bullying and cyberbullying

Bullying also greatly affects the school environment (DiStasio, Savage, & Burgos, 2016), contributing to lower academic achievement (Ladd, Ettekal, & Kochenderfer-Ladd, 2017), and higher dropout rates (Cornell, Gregory, Huang, & Fan, 2013). This type of peer violence affects the well-being of many children and adolescents (McDougall & Vaillancourt, 2015), being bullied is a major life stressor (Swearer & Hymel, 2015), is linked to alcohol and drug dependence (Radliff, Wheaton, Robinson, & Morris, 2012) and

depression (Ttofi, Farrington, Lösel, & Loeber, 2011). Socially, adolescents who were victimized show lower levels of social competence (Houbre, Tarquinio & Lanfranchi, 2010), acceptance and popularity (De Bruyn, Cillessen, & Wissink, 2010), tend to be socially isolated (Oh et al., 2008), with victimization negatively influencing social adjustment in later stages of adolescence (Cillessen & Lansu, 2015). There are several international investigations identifying negative consequences associated with involvement bullying and cyberbullying (Authors, 2016; Campbell, Slee, Spears, Butler, & Kift, 2013; Navarro, Serna, Martínez & Ruiz, 2015; Olweus & Breivik, 2014). Additionally, cyberbullying victimization has been associated with higher levels of social anxiety (Dempsey, Sulkowski, Nichols, & Storch, 2009) and depressive symptoms (Ybarra & Mitchell, 2004). Furthermore, a study by vanGeel, Vedder and Tanilon (2014) concluded that cyberbullying victimization was more strongly related to suicidal ideation compared with traditional bullying.

There is also a consensus concerning the detrimental effects of bullying on students who are both bullies and victims. The bully-victims resemble the pure victims in being depressive and anxious with poor global self-esteem and feeling disliked by peers (Olweus & Breivik, 2014). Those in the bully/victim groups (and particularly the cyber bully/victim group) displayed the most negative scores on most measures of psychological health, physical, health, and academic performance (Kowalski & Limber, 2013)

Student who are only bullies also display several negative consequences, Ybarra and Mitchell (2004) reported that 39% of students who harassed others online dropped out of school, 37% display delinquent behaviour, 32% had frequent substance abuse and 16% were severely depressed, whereas Campbell et al. (2013) concluded that bullies reported

more social difficulties and higher scores on stress, depression and anxiety scales than those students who were not involved in any bullying. Additionally, Wolke, Lereya, Fisher, Lewis, and Zammit (2014) reported that involvement in bullying led to an increased risk of developing psychotic experiences in adolescence.

1.3. Gender differences

There is a wide consensus in the literature that, in general, adolescent girls report more social anxiety in comparison to boys (La Greca & Lopez 1998; Rapee & Spence, 2004). Tillfors et al. (2012) explains that interpersonal stress is more easily evoked in girls' close relationship leading to a higher use of self-protective behaviors, which in turn may irritate and/or distance their friends.

There are also substantial differences between the two genders in bullying perpetration, with many more boys involved in bullying other students (Currie et al., 2012; Olweus & Breivik, 2014), Currie et al. (2012) reported that boys were more frequently bullies, in most countries and for all analyzed ages, by over 10%. Bullying with nonphysical means – by words, in particular – is the most common form of bullying among both boys and girls (Olweus & Breivik, 2014). However, there is a classical difference in bullying patterns first identified by Olweus (1993); bullying by physical means is more common among boys, whereas girls tend to use more subtle and indirect ways of bullying (such as spreading rumors, social isolation and manipulation of friendship relationships). Gender differences in victimization are not so clear, although boys tend to be somewhat more exposed than girls (Authors, 2016; Currie et al., 2012, Olweus & Breivik, 2014), especially in direct bullying (Authors, 2016; Cook et al., 2010; Olweus & Breivik, 2014).

In cyberbullying there is some consensus that boys are more frequently cyberbullies than girls (Campbell et al., 2013; Li, 2006; Slonje & Smith, 2008), while girls are more likely to be cyberbullying victims than boys (Authors, 2016; Navarro, Serna, Martínez & Ruiz, 2015; Slonje & Smith, 2008; Ybarra et al., 2007). However, there also studies that found no significant gender differences for cybervictimization (Beran & Li, 2007; Juvonen & Gross, 2008; Li, 2006).

1.4. Bullying involvement, social anxiety and social withdrawal

In traditional bullying research higher levels of social anxiety in adolescence have been consistently associated with victimization (Erath et al., 2007; Flanagan, Erath, & Bierman, 2008; Ranta et al., 2012; Siegel, LaGreca, & Harrison, 2009), with Juvonen, Graham and Schuster (2003) reporting that victims displayed the highest levels of social anxiety and bullies the lowest levels (even lower than uninvolved students), while bully-victims generally fell in between (Craig 1998; Juvonen et al., 2003). Several authors (La Greca & Stone, 1993; Olweus & Breivik, 2014) have even proposed that bullies choose their victims among socially anxious and insecure peers that are less able to defend themselves given their less developed social skills to interact and communicate with others. Other authors (such as Craig, 1998) have gone further and suggested a negative cycle: socially anxious children display a higher risk for victimization and repeated victimization may heighten their already high levels of social anxiety. Furthermore, being victimized may also be responsible for social withdrawal in a child (Houbre, Tarquinio & Thuillier, 2006; Olweus & Breivik, 2014), with some studies (Oh et al., 2008) concluding that being victimized predicted increased social withdrawal during late childhood.

As for cyberbullying, the findings regarding victimization are similar to traditional bullying research, with several authors reporting associations between adolescents' social anxiety and victimization of cyberbullying (Dempsey et al. 2009; Kowalski & Limber, 2013; Navarro, Serna, Martínez & Ruiz, 2015). These results have led Navarro et al. (2015) to conclude that victims of cyberbullying are socially anxious and shy individuals with poor relationships. Regarding cyber bully-victims, there have been some inconsistent results reported, Kowalski, Limber and Agatston (2008) found that cyber bully-victims reported lower levels of social anxiety than victims, whereas Kowalski and Limber (2013) reported that cyber bully-victims displayed particularly high levels of anxiety. Therefore, social anxiety has been proposed as a possible predictor of the victimization as well as an outcome of involvement in cyberbullying (Campbell et al. 2013; Dempsey et al., 2009). On the other hand, cyberbullies reported social anxiety scores similar to those who were not involved in cyberbullying (Kowalski et al., 2008), and Pabian and Vandenbosch (2016) also concluded that social anxiety was not a risk factor for subsequent perpetration of (cyber)bullying.

However, some studies have found that traditional bullying and cyberbullying may have distinct effects on social anxiety (Juvonen & Gross, 2008; Pabian & Vandebosch, 2016). Pabian and Vandebosch (2016) proposed that, although longitudinal examinations were scarce, a high level of social anxiety was an outcome of being a victim of traditional bullying, whereas it was a predictor for being a victim of cyberbullying because adolescents who are not developing good social skills in face-to-face interactions may escape from their social anxieties in the online world. An explanation for this may be found in Navarro et al.

(2015), who concluded that socially isolated and anxious children communicated more with strangers and were, thus more exposed to online risks such as cyberbullying victimization.

1.5. Present Study

It is important that teachers, school administrators and researchers gain a better understanding of the overlap between bullying and cyberbullying in order to develop adequate strategies for dealing with both phenomenon. More crucially, this study aims to extend our understanding of the role that bullying and cyberbullying may play in social anxiety and social withdrawal, as well as identifying the predictors, at different levels, that influence this relationship. In particular, we posed the following hypothesis:

1) There is a high overlap between victims and bullies in traditional bullying and cyberbullying:
    a. The majority of students who are cyberbullying victims will be also be traditional bullying victims;
    b. The majority of students who are cyberbullies will also be traditional bullies;
2) There are differences between genders in students' social anxiety and/or social withdrawal);
3) There are differences in students' social anxiety and/or social withdrawal according to their bullying roles (bully, victim, bully-victim, not participant);
4) Does class size moderate the relation between bullying role and social anxiety and/or social withdrawal.

2. Method

2.1. Participants

The sample was a convenience sample composed of 668 middle school students (7th and 8th grade), from 36 classes in five public middle schools in the district of Lisbon. Student´s age ranged from 11 to 16 years (*M* = 12.73, *SD* = 1.08). The sample was composed by 373 boys (55.8%) and 295 girls (44.2%). Classes varied in size, ranging from 13 to 23 students (*M* = 19.05; *SD* = 2.90). Classes were extremely homogeneous in terms of socioeconomic status and ethnicity (0.9% of students were Brazilian). As for school location, 409 students attended urban schools and 259 students attended rural schools. Additional information about the participants is displayed in Table 1.

INSERT TABLE 1

There was attrition, as 17 students did not participate in the study: four parents declined to give their consent to student participation, while other 13 students were absent due to being sick or other reasons unknown at data collection time.

2.2. Procedure

Evaluation took place after obtaining authorization from school boards and parents, following national legislation, and data collection procedure occurred during the month of October in the 2012/2013 school year, less than a month after the start of the school year. The questionnaire was applied as a part of a screening, applied to middle school students, for potential inclusion in a Social and Emotional Learning program, by one of the four project's educational psychologists in the presence of the teachers. Participants filled the questionnaires in their regular classroom setting. The psychologists read out loud questionnaire instructions, explained the study procedure, reassured students of the

confidential nature of the study and assisted the participants who needed help. Students took about 20 minutes to fill out the questionnaires per classroom. If a student was not present during that period the psychologist would return the following week (n = 21).

2.3. Measures

Social Withdrawal and Social Anxiety. The *Social Withdrawal* and *Social Anxiety* subscales of the *Social and Emotional Competences Evaluation Questionnaire* (QACSE; Authors, 2015) were used. This self-report instrument for adolescents (11 to 16 years) consists of 39 items allowing for the assessment of six dimensions, two of which were used in the present study *Social Withdrawal* (7 items; e.g.: "I prefer to stay alone and not speak to any one"; α = .74); and *Social Anxiety* (7 items; e.g.: "I am scared when facing new situations or activities"; α = .78). The items are presented as statements to be rated in a four-point scale (A – *never*; B – *sometimes*; C – *frequently* and D - *always*).

Bullying. The Bullying and Cyberbullying Behaviours Questionnaire (QCBC; Authors, 2016) was used. The QCBC is a 34-item self-report measure intended to assess bullying (verbal, physical, material, ethnical, of sexual nature, defamation, threats) and cyberbullying behaviours (denigration, flaming and cyberstalking). The Questionnaire includes two scales that assess two different participant role behaviours: bully and victims. The Bullying subscale (α = .77; .81 in the present study) and the Victimization subscale (α = .79; .83 in the present study) each contain eight items describing bullying perpetration (e.g.; 'I called them mean names, made fun or teased them'), or being a victim of bullying behaviours (e.g.; 'They spread rumours or lies about me') and they assess the frequency of bullying perpetration or victimization experienced, by asking participants to report how often they had perpetrated or been victims of the behaviour described in each item during

the previous school year on a five-point scale (1 = Never happened; 2 = Once or twice during the school year; 3 = 2 to 3 times a month; 4 = Once a week; 5 = Several times a week). Exploratory and confirmatory factor analysis results supported the two-factor structure of the QCBC in a sample of 1039 middle school students (Authors, 2016). The Victimization subscale is complemented by six items that ask students to provide further information about victimization situations (e.g.; 'Did you tell anyone that this situation occurred? '). QCBC also contains other four items where students are provided with a definition of bullying (i.e., frequent, power differential, and negative intent), and then asked to rate the frequency of bullying, victimization, defending and fear of being bullied.

2.4. Data analysis

In the present study, the criteria adopted for classify to students as bullies, victims or bully-victims followed Authors (2016). Students were classified as victims or bullies if they rated the item describing victimization (or bullying) two or more and, simultaneously, also rated at least once or twice during the previous school year in one of the eight victim (or bully) behaviours described. Students identified as bully-victims were those who filled these criteria for both roles.

The analyses conducted acknowledged that students from the same class have a much bigger probability of providing responses with a high degree of correlation (Heck, Thomas, & Tabata, 2013), so according to the clustered nature of the data with 668 students nested within 36 school classes multilevel models were used. To test the research hypotheses of the present study, two-level models were used. An unconditional model (Model 0) with no predictors was first run analyse between-class variance. Taking advantage that multilevel

models allow for the progressive and/or simultaneous adjustment at distinct levels (Heck et al., 2013), in the present study, Gender, Grade, and Bully Role (or Cyberbully role) were added to the model as Level 1 (individual) predictors thus creating Model 1. In Model 2, in the outcome variables where the *Intraclass Correlations* (ICC) indicated that a significant portion of the variance occurred between classes, predictors at level-2 (i.e. Class Size and Gender Ratio) were introduced. Class Size was centered Grand Mean Centered. After several analyses, *Scaled Identity* was chosen as the covariance type for Level 2, while *Diagonal* was chosen for the analyses that had more one random factor (hypothesis four). All analysis and models were estimated using IBM SPSS Statistics for Windows, Version 20 (IBM Corp, Armonk, NY). Heck et al. (2013) note that when using the SPSS mixed model, the reference group for a variable entered as a factor is the last category.

3. Results

3.1. Descriptive statistics and intraclass correlations

Regarding the total sample, 7% of students were involved in bullying as a perpetrator while only 3.3% were perpetrators of cyberbullying, 8.8% of the students were victims of bullying and 7.5% victims of cyberbullying, while 5.5% were involved as bully-victims and 2.1 as cyberbully-victims. Considering gender, in bullying 8% of the boys were involved as perpetrators, 8% as victims and 7.5% as bully-victims, while 5.7% of the girls were involved as perpetrators, 9.8% as victims, and 3.2% as bully-victims. As for cyberbullying, 4.9% of the boys were involved as perpetrators, 3.9% as victims and 2.3% as bully-victims, while 1.3% of the girls were involved as perpetrators, 12% as victims, and 1.9% as bully-victims.

The estimation of variance components for the unconditional models (Intraclass Correlation Coefficient; *ICC*), indicated that there was only significant between-class variability to warrant consideration of class-level effects for Social Withdrawal (*ICC* = .057), with between classes variance accounting for 5.7% of total variation. There was not sufficient variance to be explained at the class level in Social Anxiety (*ICC* = .029) following Heck et al. (2013) who suggested that an *ICC* of .05 is required to justify the inclusion of a level into multilevel analysis.

3.2. Overlap between bullying and cyberbullying

There were 16 students (32.7% of cyberbullying victims) who were victimized both by bullying and cyberbullying, while 11 (52.4% of cyberbullies) students reported to be bullies and cyberbullies. No students who were victims in traditional bullying reported to be cyberbullying their colleagues.

3.3. Social Anxiety - Bullying

As displayed in Table 3 (Bullying Model 1) there was a very moderate decrease in within-classes and a large decrease in between-classes variance when individual variables were added. Individual level variables accounted for 4.9% of within-class variance and 58.5% of between-class variance. Gender was found to be a significantly predictor of Social Anxiety with girls reporting much higher levels ($p < 0.001$). Regarding Bullying role, Victims and Bully-Victims were significant predictors of Social Anxiety, even after adjusting for other Level 1 variables (Gender and Grade).

3.4. Social Anxiety - CyberBullying

Results for cyberbullying are very similar to those of bullying, as seen in Table 3 (Cyberbullying Model 1) there was a very moderate decrease in within-classes and a large decrease in between-classes variance when individual variables were added. Individual level variables accounted for 4.3% of within-class variance and 22% of between-class variance. Gender was found to be a significantly predictor of Social Anxiety with girls reporting much higher levels ($p < 0.001$). As for Bullying roles, after adjusting for Gender and Grade, only Victims were significant predictors of Social Anxiety.

3.5. Social Withdrawal - Bullying

As displayed in Table 4, the addition of individual level predictors (Model 1) led to a decrease in within- and between-classes variances of, respectively, 7.9% and 64.4%, Bullying Roles were significant predictors of social withdrawal, with victims ($\beta = 1.86$, $SE = 0.42$; $t = 4.48$, $p = < .001$), bullies ($\beta = 2.08$, $SE = 0.46$; $t = 4.52$, $p = <.001$) and bully-victims ($\beta = 3.35$, $SE = 0.51$; $t = 6.54$, $p < .001$) reporting higher levels of social withdrawal than students not involved in bullying.

With the addition of class-level variables in Model 2, between-classes variance greatly decreased further. Class size was a significant predictor of Social Withdrawal was across school classes ($\beta = -0.13$, $SE = 0.04$; $t = -2.89$, $p = .007$), with the results indicating that students in larger classrooms had lower levels of social withdrawal. Altogether, the individual- and class -level variables explained 7.9% of the within-class variance and 86.4% of the between-class variance in self-control, and between-classes variances was no longer significant ($p = .612$). In order to test hypothesis four we created a final model that include an interaction between Class size and bullying roles. Only for Bully/Victims ($\beta =$

0.39, *SE* = 0.17; *t* = 2.30, *p* = .022) does Class Size moderate the relation between bullying role and social withdrawal.

3.6. Social Withdrawal - CyberBullying

The results for the relation between cyberbullying roles and Social Withdrawal are also shown in Table 4, there was a decrease of within- and between-classes variances when individual variables were added (Model 1), 2.3% for within-class variance and 33.9% for between-class variance respectively. CyberBullying Role was a significant predictor of social withdrawal, with Victims (β = 1.31, *SE* = 0.47; *t* = 2.76, *p* = .006), Bullies (β = 2.27, *SE* = 0.70; *t* = 3.23, *p* = .001) and bully-victims (β = 1.84, *SE* = 0.88; *t* = 2.08, *p* = .038) reporting higher levels of social awareness than students not involved in bullying.

The addition of class-level variables in Model 2 led to a further decrease in between-class variance, to a point where 57.6% was explained by the class- and individual-level predictors, and it was no longer significant (*p* = .198). When included in the model, class size helped to explain the variability of social withdrawal across classes (β = -0.13, *SE* = 0.05; *t* = -2.38, *p* = .023), with the results indicating that students in larger classrooms had lower levels of social withdrawal. In order to test hypothesis four we created a final model that include an interaction between class-size and cyberbullying roles, however no significant cross-level interaction were found: Victims (β = 0.15, *SE* = 0.17; *t* = .863, *p* = .388), Bullies (β = 0.03, *SE* = 0.17; *t* = .170, *p* = .865), Bully/Victims (β = 0.01, *SE* = 0.29; *t* = .039, *p* = .969).

4. Discussion

The present study aimed to add to the present knowledge regarding the role that bullying and cyberbullying play in middle school students' social anxiety and social withdrawal in, and additionally to deepen the present understanding of the overlap between bullying and cyberbullying in order to support researchers, teachers and school leader in creating adequate strategies for dealing with both phenomenon.

So, given the discrepancies in the literature and the lack of studies addressing this issue in Portugal, the present study sought to analyze the degree of overlap of victims and bullies between traditional bullying and cyberbullying. Although there was a high overlap between traditional bullying and cyberbullying in bullies (52.4%; more than half of cyberbullies were also traditional bullies), the same did not occur for victims, for whom only a third of cyberbullying victims (32.7%) were also traditional bullying victims. Therefore, the first hypothesis was only partially supported. The amount of overlap found in the current study is in line with Ybarra et al. (2007), but it is much lower than the level reported by Juvonen and Gross (2008). Even so, considering that almost a third of the children in our sample who were bullied in cyberspace were also bullied at school, it is possible to conclude that bullying did indeed move between the school and cyberspace, and therefore the amount of overlap between traditional bullying and cyberbullying found in the current study supports those who defend that bullying and cyberbullying should be studied jointly as different aspects of the same phenomenon (Juvonen & Gross, 2008; Olweus & Breivik, 2014). Furthermore, the present results also support the conclusion made by Beran and Li (2007) that "bullies have gone digital" given that the students perpetrate traditional forms of bullying in schools are also mostly cyberbullies.

Also relevant was that none of the students who concomitantly were traditional bullying victims and also had high levels of socially anxiety reported to be a cyberbully, so they could not be exerting revenge online on their offline perpetrators, thereby denying the ‘‘revenge of the nerds hypothesis’’ (König et al. 2010). The results also do not support the conclusions by Beran and Li (2007) that students who are bullied through technology are likely to use technology to bully others. However, the present results are in line with the very low percentage of traditional bullying victims who had cyberbullying other studies reported by Slonje and Smith (2008). Conversely, the reduced number of victims who were concomitantly cybervictims and the higher levels of social anxiety found among traditional bullying victims seem to support the conclusions of VanRoy et al. (2009) in that early adolescents with social anxiety mingled less frequently with peers by phone, text message or email than those who did not suffer from social anxiety.

Hypothesis two was partially confirmed given that the finding from the present study add to the wide consensus found in the literature (e. g.; La Greca & Lopez 1998; Rapee & Spence, 2004) that adolescent girls reported more social anxiety than boys, which is explained by Tillfors et al. (2013) by higher use of self-protective behavior in girls, because interpersonal stress is more easily evoked in girls’ close relationship. There were, however, no significant differences in social withdrawal found between genders.

There were also differences found in social anxiety and social withdrawal according to bullying and cyberbullying roles, thereby supporting hypothesis three. Bullying and cyberbullying victims, as well as bullying bully-victims, displayed higher levels of social anxiety than students who were not involved in bullying/cyberbullying. The results found

in the present study are in alignment with most of the literature in this area (Erath et al., 2007; Flanagan et al., 2008; Juvonen et al., 2003; Ranta et al., 2012). As for social withdrawal, all students who had roles (either as bullies, victims and bully-victims) displayed bullying higher levels than students who were not involved in bullying, which is consistent with several authors (Houbre et al., 2006; Olweus & Breivik, 2014). All these differences remained significant after adjusting for grade, gender for both Social Anxiety and Social Withdrawal and also for Class Size and Gender Ratio for Social Withdrawal.).These results are (partially) consistent with Kowalski and Limber (2013) who had concluded that traditional bullying bully-victims displayed the highest levels of social anxiety and social withdrawal, and with Pabian & Vandenbosch (2016) who found a negative relationship between victimization of (cyber)bullying and social anxiety, proposing that perpetrators might choose socially anxious individuals as their target, or that social anxiety might be a result of being victimized. The results are also consistent with Tillfors et al. (2012), who had suggested that socially anxious adolescents using self-protective strategies frequently (e.g., avoidance behavior both on an overt level and a subtle level) may evoke irritation in their peers. Another possible explanation is that victimized students tend to be more afraid of social situations, which then limits their engaging in positive relationships with others. Bully-victims were those who showed the highest levels of social withdrawal, these students tend to react aggressively to being victimized (Olweus & Breivik, 2014), and these reaction may lead to withdraw from rewarding and satisfying relationships, thus preventing them from learning the social skills they need.

Finally, hypothesis four was only partially supported as class size only moderated the relation between bullying roles and social withdrawal for bully-victims. This result, besides highlights the importance of taking into account class-level variables when analyzing this relationship, identified one important aspect of the bullying phenomenon; unlike victims, bullies and students not involved in bullying, bully-victims in larger classes have higher levels of social withdrawal which is in line with the conclusion that those student who react violently in larger classes withdraw from rewarding and satisfying relationships, making them more isolated and probably prone for school absenteeism.

As a whole, the results of this study support that there is a connection between school bullying and cyberbullying and support Pabian and Vandenbosch (2016) who suggested that bullying is a multifaceted phenomenon involving various behaviours at differing times, and that addressing cyberbullying requires a holistic approach. Cyberbullying intervention programs, therefore, should be developed in conjunction with anti-bullying programs. Additionally, as Bowles (2016) suggested, to deal with both traditional bullying and cyberbullying it would be import to implement effective interventions to reduce Social anxiety such as Social and Emotional Learning programs. The results also provide some insight into why victimized adolescents display social adjustment problems.

4.1. Limitations

One main limitation is that results are based solely on student' self-reports. Even though for cyberbullying student reports are valid for understanding the child's perspective and that Hymel and Swearer (2015) have concluded that self-reports are economical, efficient and give youth a voice in the assessment process, since they tap into the perceptions of both

bullies and victims, this methodology presents several weaknesses: they can be vulnerable to self-presentation strategies, and/or fear of retaliation (Hymel & Swearer, 2015) or influenced by social desirability and memory biases. Therefore, future studies should include peer-reports and teacher reports, even though teachers may be less aware of cyberbullying than are students themselves.

Additionally, even after adding individual level predictors (grade, gender, bullying roles), much of within-class variance was left unexplained, so future studies should try to identify other individual characteristics, such as previous retention rates (Crothers et al., 2010) or students' social skills (Authors, 2017) that need to be controlled for.

4.1. Future studies

The current study's findings lead to several questions that should be further investigated in future studies that must be longitudinal. The most intuitive is about the direction of the relations between social anxiety, social withdrawal and (cyber)bullying victimization, i. e., do bullies chose social anxious colleagues such as suggested by Pabian and Vandenbosch (2016) or do victims show higher levels of social anxiety and social withdrawal due to (cyber)bullying victimization. Also, the direction of the relation found between social withdrawal and class size deserves further attention, as different efforts and strategies may be need in addressing different facets of the bullying/cyberbullying problem. Longitudinal designs to analyse potential gender ratio effect (i.e.; if it is the concentration of boys itself; it is the social dynamics of classes with a higher concentration of boys that may possibly contribute to bullying/cyberbullying occurring).

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Table 1

Bullying and Victimization across Gender, Grades and Class composition

Characteristic	Total (%)	Social Isolation M (SD)	Social Anxiety M (SD)
Gender			
Male	373 (55.8%)	4.50 (3.26)	6.68 (3.51)
Female	295 (44.2%)	4.03 (3.18)	8.07 (3.61)
Grade			
7th Grade	414 (62.0%)	4.33 (3.23)	7.40 (3.58)
8th Grade	254 (38.0%)	4.24 (3.23)	7.12 (3.69)
Proportion of Boys			
0 to 33.3% Boys	37 (5.5%)	4.43 (3.17)	7.62 (3.09)
33.4-66.6% Boys	459 (68.7%)	4.09 (3.18)	7.30 (3.70)
66.7-100% – Boys	172 (25.7%)	4.82 (3.34)	7.21 (3.53)

Note. *N* = 668

Table 2

Social Anxiety and Social Isolation per Bullying and CyberBullying Role

	Bullying (N = 668)			
	Victims *n* = 60 *M* (*SD*)	Bullies *n* = 48 *M* (*SD*)	Bully/Victims *n* = 38 *M* (*SD*)	Not Involved *n* = 522 *M* (*SD*)
Social Anxiety	8.32 (3.96)	7.06 (3.91)	8.87 (4.19)	7.15 (3.45)
Social Isolation	5.73 (3.47)	5.94 (3.53)	7.26 (3.71)	3.86 (2.93)
	CyberBullying (N = 668)			
	Victims *n* = 49 *M* (*SD*)	Bullies *n* = 21 *M* (*SD*)	Bully/Victims *n* = 13 *M* (*SD*)	Not Involved *n* = 585 *M* (*SD*)
Social Anxiety	8.90 (3.99)	7.05 (3.69)	7.56 (3.53)	7.17 (3.56)
Social Isolation	5.37 (3.77)	6.57 (3.60)	6.31 (3.04)	4.08 (3.11)

Table 3

Multilevel Model Analysis Models for Social Anxiety

Parameters		Bullying	Cyberbullying
	Model 0 Null	Model 1 Level 1: Individual	Model 1 Level 1: Individual
Estimates of Fixed Effects			
Intercept	7.28 (0.17)***	8.44 (2.31)**	8.79 (2.52)**
Grade		-0.27 (0.31)	-0.29 (0.34)
Gender (Girls = 1)		1.45 (0.27)***	1.27 (0.28)***
Victims		1.16 (0.48)*	1.36 (0.53)**
Bullies		0.17 (0.53)	0.19 (0.79)
Bully-Victims		2.11 (0.59)***	0.11 (1.99)
Estimates of Covariance Parameters			
Residual	12.68 (0.71)***	12.06 (0.68)***	12.13 (0.68)***
Intercept Class	0.41 (0.27)	0.17 (0.21)	0.32 (0.24)
ICC	.031	.014	.026
R^2 (within)		.049	.043
R^2 (between)		.585	.220
Deviance ($-2_{loglikelihood}$)	3608.893	3567.212	3577.619
Δ-2LL		41.681***	31.274***
Number of estimated parameters	3	8	8

Note. $^{*}p < .05$; $^{**}p < .01$; $^{***}p < .00$

Table 4

Multilevel Model Analysis Models for Social Withdrawal

Parameters	Model 0 Null	Bullying		Cyberbullying	
		Model 1 Level 1: Individual	Model 2 Level 2: Class	Model 1 Level 1: Individual	Model 2 Level 2: Class
Estimates of Fixed Effects					
Intercept	4.33 (0.18)***	4.32 (2.14)***	7.45 (2.25)**	4.70 (2.43)***	5.28 (2.30)*
Grade		-0.05 (0.29)	-0.14 (0.26)	-0.05 (0.33)	-0.13 (0.30)
Gender (Girls = 1)		-0.30 (0.24)	-0.25 (0.24)	-0.46 (0.25)	-0.41 (0.25)
Victims		1.86 (0.42)***	1.91 (0.41)**	1.31 (0.47)**	1.29 (0.47)**
Bullies		2.08 (0.46)***	2.10 (0.46)**	2.27 (0.70)**	2.29 (0.70)**
Bully-Victims		3.35 (0.51)***	3.42 (0.51)***	1.84 (0.88)*	1.75 (0.88)*
Class Size			-0.13 (0.04)**		-0.13 (0.05)*
Gender Ratio			-0.06 (0.25)		-0.05 (0.30)
Estimates of Covariance Parameters					
Residual	9.86 (0.56)***	9.08 (0.51)***	9.08 (0.51)***	9.63 (0.54)***	9.62 (0.54)***
Intercept Class	0.59 (0.28)*	0.21 (0.18)	0.08 (0.15)	0.39 (0.23)	0.25 (0.20)
ICC	.057	.022	.009	.039	.025
R^2 (within)		.079	.079	.023	.024
R^2 (between)		.644	.864	.339	.576
Deviance ($-2_{loglikelihood}$)	3451.192	3382.416	3374.609	3428.305	3422.084
Δ-2LL		68.777***	7.807*	22.887***	6.221*
Number of estimated parameters	3	8	10	8	10

Note. $^{*}p < .05$; $^{**}p < .01$; $^{***}p < .001$